

**CLAIMS**

1. Method of monitoring traffic in a network (1) comprising a plurality of nodes (2A, ..., 2D) sharing one or more common resources (3) having a linear structure for sending data in a given direction, characterized in that it consists in, in each node (2B):
  - detecting if said resource is being used to send data or if it is not being used;
  - then, if it is not being used, prohibiting the node (2B) concerned from sending data in a portion of said resource (3) that is determined statistically as a function of the requirements for use of said resource by all of the nodes (2C, 2D) on the downstream side of the node (2B) concerned.
2. Method according to claim 1, characterized in that, to determine a portion of said resource to be preserved by a statistical process and as a function of the requirements for use of that resource by all of the nodes (2C, 2D) on the downstream side of the node (2B) concerned, the method consists in supplying to each of said nodes statistical information defining the resource requirements of all of the nodes on the downstream side.
3. Method according to claim 1, characterized in that, if said resource is not being used, it further consists in measuring one or more lower limits of the time during which it is continuously unused and in that, to prohibit the node (2B) concerned from sending data in a portion of said resource (3), it further consists in prohibiting the sending of data during a time interval having a duration equal to a predetermined elementary prohibition duration or a multiple thereof, the prohibition duration being made less than or equal to the measured duration.
4. Method according to claim 3, for a network transmitting data packets having variable sending durations, characterized in that the elementary prohibition duration is at least equal to the maximum duration for sending a packet and, in that case:
  - If a node detects that the resource is not being used and if the node must refrain from sending for one or more elementary prohibition durations:
    - If the duration of non-use is greater than an elementary

prohibition duration, the node refrains from sending for at least one elementary prohibition duration;

– If the duration of non-use is less than an elementary prohibition duration and there are one or more data packets having a size less than an elementary prohibition duration waiting in that node, the node sends said packet(s);

- If a node detects that the resource is not being used, does not have to refrain from sending, and has a data packet waiting having a size less than the duration of non-use, the node sends that packet.

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5. Method according to claim 2, characterized in that, to determine a portion of said resource to be preserved by a statistical process and as a function of requirements for use of said resource by all the nodes on the downstream side of the node concerned, the method consists in supplying to the node concerned variable information updated by the downstream nodes in order to alleviate congestion problems if a downstream node does not manage to send its packets and its buffers are full.

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6. Node for a network (1) comprising a plurality of nodes (2A, ..., 2D) for sending data in a given direction that share one or more common resources (3) and have a linear structure, characterized in that it comprises:

- means (10) for detecting if said resource is being used to send data or if it is not being used;

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- means (5, 9) for prohibiting the node concerned from sending data in a portion of said resource (3); and

- means (8) for determining that resource portion as a function of requirements for use of said resource by all the nodes (2C, 2D) on the downstream side of the node (2B) concerned.

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7. Node according to claim 6, characterized in that the means (8) for determining said resource portion include means (8) for receiving and storing statistical information defining the resource requirements for all the nodes on the downstream side.

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8. Node according to claim 6, characterized in that the means (10) for detecting if said resource is being used to send data or if it is not being used include means for measuring one or more lower limit(s) of the time

during which it is continuously not being used and in that the means (5, 9) for prohibiting the node (2B) concerned from sending data in a portion of said resource (3) include means for prohibiting the sending of data during a time interval having a duration equal to a predetermined elementary prohibition duration or a multiple thereof, the prohibition duration being less than or equal to the measured duration.

9. Node according to claim 6, characterized in that it further includes synchronization means for synchronizing prohibition of sending by the various nodes of said network.

10. Network (1) characterized in that it includes a plurality of nodes (2A, 2B, 2C, 2D) according to any one of the preceding claims.

11. Network according to claim 10, characterized in that it further includes:

- means (6A) for receiving information on the requirement for use of said resource by all the nodes, and

- means (6B) for sending each of said nodes information on the requirement for use of said resource by the nodes on the downstream side of the node concerned.